

Application Serial No. 10/731,784  
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Currently Amended) A method for generating a multi-dimensional data signal, comprising the steps of:

generating a first signal from an electromagnetic radiation source;

directing the first signal onto the surface of a data storage ~~device;~~ and device;

receiving a second, multi-dimensional signal from the data storage device; and

manipulating the second signal into at least two

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combinations of measurable parameters selected from the group consisting of length, width, height, radius, and angle.

12. (Original) The method of claim 11, wherein the data captured is binary data.

13. (Cancelled) The method of claim 11, further comprising the step of manipulating the second signal into at least two combinations of measurable parameters selected from the group consisting of length, width, height, radius, and angle.

14. (Original) The method of claim 11, further comprising the step of measuring the second signal.

15. (Original) The method of claim 11, wherein said data storage device comprises at least one static storage medium.

16. (Original) The method of claim 15, wherein the first signal bisects the at least one static storage medium.

17. (Original) The method of claim 15, wherein the at least one static storage medium comprises first and second static storage media.

18. (Original) The method of claim 17, further comprising the step of accessing multiple data tracks on the first and second storage media simultaneously and in parallel.

19. (Original) The method of claim 17, wherein the first and second static storage media comprise first and second optical disks arranged such that at least one surface of the first optical disk is parallel to at least one surface of the second optical disk.

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20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Original) A device, comprising:

a source of an electromagnetic radiation signal;

a reflective element adapted to direct the  
electromagnetic radiation signal onto the surface of a data  
storage device;

a second element adapted to capture binary data in  
multiple dimensions from the data storage device, medium, or  
media;

transporting means for transporting data in multiple  
dimensions;

manipulating means for manipulating said  
electromagnetic radiation into any given minimum two  
combinations of measurable dimensions relating to length,  
width, height, radius, or angle; and

measuring means for measuring said electro-magnetic  
energy.

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30. (Original) The device of claim 29, wherein the data storage device comprises a static storage medium.

31. (Original) A device for generating a multidimensional signal, comprising:

a source of electromagnetic radiation;

capturing means for capturing binary data in multiple dimensions from a static storage device, medium, or media;

transporting means for transporting data in multiple dimensions;

manipulating means for manipulating said electromagnetic radiation into any given minimum two combinations of measurable dimensions relating to length, width, height, radius, or angle; and

measuring means for measuring said electro-magnetic energy.

32. (Original) The device of claim 31, wherein said signal can be converted to a static state.

33. (Original) The device of claim 31, wherein said signal can be converted to a dynamic state.

34. (Original) The device of claim 31, wherein said signal can be measured dimensionally by a function of binary data.

35. (Original) The device of claim 31, wherein said signal can be measured dimensionally by some function of binary bit(s) in relation to time.

36. (Original) The device of claim 31, wherein said signal can comprise and be measured by some function of binary bit(s) in relation to space.

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37.(Original) The device of claim 31, wherein said signal can comprise and be measured by any given number of bits of information in relation to combinations of space and time.

38.(Original) The device of claim 31, wherein said signal can be manipulated or processed mathematically with linear or non-linear, parallel, or multidimensional algorithms.

39.(New) A method for accessing data from data storage media, comprising the steps of:  
    providing first and second data storage media;  
    simultaneously directing electromagnetic radiation onto the surfaces of the first and second data storage media; and  
    receiving, as a multi-dimensional data stream, reflections of the electromagnetic radiation from the first and second data storage media.

40.(New) The method of claim 39, wherein the multi-dimensional data stream includes reflections of the electromagnetic radiation from both the first and second data storage media.

41.(New) The method of claim 39, wherein the reflections of the electromagnetic radiation from the first and second data storage media are received simultaneously.

42.(New) The method of claim 39 wherein, prior to being directed onto the surface of either of the first and second data storage media, the electromagnetic radiation is transformed into a hologram comprising a series of line patterns.

43.(New) The method of claim 42, wherein the electromagnetic radiation is transformed into a hologram by way of a holographic lens element.

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44.(New) The method of claim 42, wherein the reflection of the hologram is captured by a CMOS or CCD photo diode array.

45.(New) The method of claim 39 wherein, after being directed onto the surface of either of the first and second data storage media, the reflected electromagnetic radiation is transformed into a hologram comprising a series of line patterns.

46.(New) The method of claim 45, wherein the reflection of the hologram is captured by a detector array.

47.(New) The method of claim 39, wherein the data stream comprises binary data.

48.(New) The method of claim 39, wherein each of the first and second data storage media has a plurality of data tracks thereon, and further comprising the step of simultaneously accessing at least one data track on the first data storage medium and at least one data track on the second data storage medium.

49.(New) The method of claim 48, wherein the at least one data track on the first data storage medium and the at least one data track on the second data storage medium are accessed in parallel.

50.(New) The method of claim 39, wherein each of the first and second data storage media has a plurality of data tracks thereon, and further comprising the step of simultaneously accessing a plurality of data tracks on the first data storage medium and a plurality of data tracks on the second data storage medium.

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51. (New) The method of claim 50, wherein the at least one data track on the first data storage medium and the at least one data track on the second data storage medium are accessed in parallel.

52. (New) The method of claim 39, wherein at least one of the first and second data storage media is a static data storage device.

53. (New) A method for generating a multi-dimensional data signal, comprising the steps of:

generating a first signal from an electromagnetic radiation source;

directing the first signal onto the surfaces of first and second static data storage media; and

receiving a second, multi-dimensional signal from the data storage media.

54. (New) The method of claim 53, wherein the first signal bisects the surface of the first and second static storage media.

55. (New) The method of claim 53, wherein the data captured is binary data.

56. (New) The method of claim 53, further comprising the step of manipulating the second signal into at least two combinations of measurable parameters selected from the group consisting of length, width, height, radius, and angle.

57. (New) The method of claim 53, further comprising the step of measuring the second signal.

58. (New) The method of claim 53, wherein said data storage

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device comprises at least one static storage medium.

59. (New) The method of claim 57, wherein the first signal bisects the at least one static storage medium.

60. (New) The method of claim 57, wherein the at least one static storage medium comprises first and second static storage media.

61. (New) The method of claim 59, further comprising the step of accessing multiple data tracks on the first and second storage media simultaneously and in parallel.

62. (New) The method of claim 59, wherein the first and second static storage media comprise first and second optical disks arranged such that at least one surface of the first optical disk is parallel to at least one surface of the second optical disk.

63. (New) A data retrieval system, comprising:  
a source of electromagnetic radiation;  
first and second data storage media;  
a beam splitter adapted to receive electromagnetic radiation from said source and to split the electromagnetic radiation into a first plurality of beams that impinges on the first data storage medium and a second plurality of beams that impinges on the second data storage medium;  
a sensor array;  
a mirror; and  
a holographic lens element adapted to cooperate with said mirror so as to generate a hologram in the form of multiple data patterns that are focused upon said sensor array.

64. (New) The data retrieval system of claim 63, wherein the



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holographic lens element is adapted to receive electromagnetic radiation reflected from the first and second data storage media and is further adapted to generate, from the reflected electromagnetic radiation, a hologram in the form of multiple data patterns that are focused upon said sensor array.

65.(New) The data retrieval system of claim 63, wherein said source of electromagnetic radiation is a laser source.

66.(New) The data retrieval system of claim 63, wherein said data patterns are line patterns.

67.(New) The data retrieval system of claim 63, wherein each of said first and second data storage media comprises a plurality of tracks, and wherein each of said data patterns corresponds to electromagnetic radiation reflected from one of said plurality of tracks.

68.(New) The data retrieval system of claim 67, wherein said multiple data patterns include a first data pattern corresponding to electromagnetic radiation reflected from a first track on said first data storage media, and a second data pattern corresponding to electromagnetic radiation reflected from a second track on said second data storage media.

69.(New) The data retrieval system of claim 63, wherein the first and second data storage media are optical disks.

70.(New) The data retrieval system of claim 63, wherein the first and second plurality of beams impinge simultaneously on the first and second data storage media.

71.(New) The data retrieval system of claim 70, wherein the

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first and second plurality of beams impinge in parallel on  
the first and second data storage media.